



COMPANY REPORT

Ryan Casberg Y10 trust (2)

Dedicated to Mom and Dad

This iBook is dedicated to my mother father because they are the ones who are supporting my in my school life. I am lucky enough to have a family willing to send me to a good school to learn, and even if i get lazy, they push me to strive at my hardest. Although i did not start of well in my Y10 math term, i greatly improved as Mr. Slosberg told me to read the rubric. As i read the rubric, i found it was much easier to receive points. The following assessment on point slpe i received full marks which really boosted my confidence in math and made me think that i can actually achieve it. Even though I may not think of maths important in my future life, I bet that I will not be able to thank my parents enough for pushing me to do my best and remember everything possible.

Ryan Casberg Y10 Trust (2)

My company



“ Bank of America Corporation (NYSE: BAC) is an American multinational banking and financial services corporation headquartered in Charlotte, North Carolina. It is the largest bank holding company in the United States by assets. ”

The company that I will be researching for this unit is the Bank of America. I thought the Bank of America would be interesting because my father used to work for the company. I then realized that the Bank of America is not that great of a company to invest in. Since their stock prices are very high and they did not have a very good year in 2007. Despite the massive drop, I thought it would be a good company to research about. For this project, I will be using the Bank of America annual report of 2007.



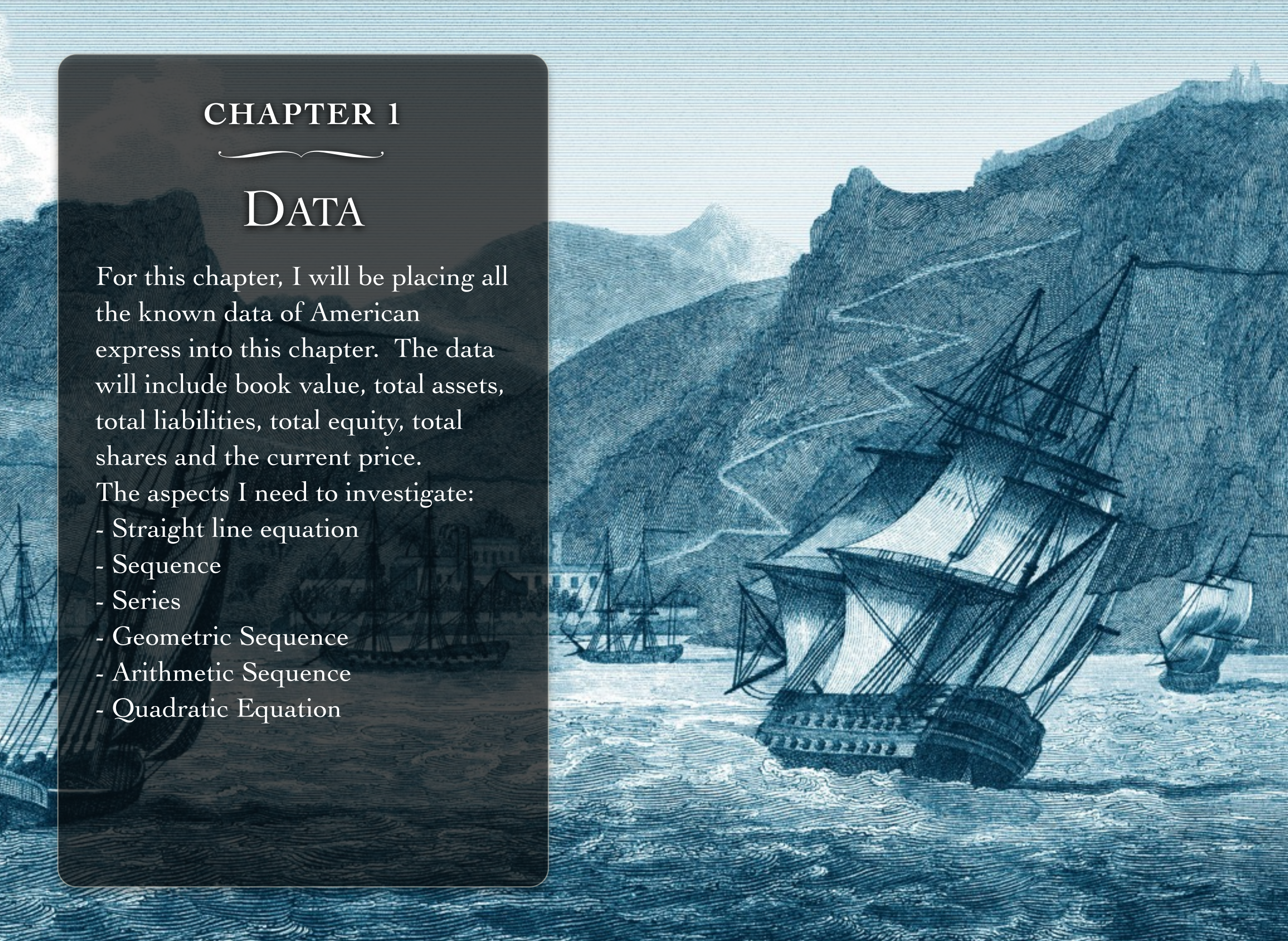
CHAPTER 1

DATA

For this chapter, I will be placing all the known data of American express into this chapter. The data will include book value, total assets, total liabilities, total equity, total shares and the current price.

The aspects I need to investigate:

- Straight line equation
- Sequence
- Series
- Geometric Sequence
- Arithmetic Sequence
- Quadratic Equation



Bank of America Information:

total assets: \$ 1,715,746

total liabilities: 1,568,000

total equity (assets - liabilities): 146000

total shares (equity/shares): 10,800,000

NAV/Book Value: \$ 33.18

Current Price: \$ 118,000,000,000

How I found my Company...

I found my company at the student library in which i choose the Bank of America because my dad used to be the IT technician of their company. Although Bank of America does not have the best record, i found they would be a good company to research on. I found the main research of my company on the 10-k page which would show the total amount of shares. I found the liabilities, assets and equity on page 39 of the Bank of American book. In order to find the book value i must take the total equity and divide it by the total amount of shares, times it by the ratio, if it were to be a million, billion or trillion.

Total assets: 2006 - 2011

2006 - 1,400,000

2007 - 1,700,000

2008 - 1,800,000

2009 - 2,200,000

2010 - 2,200,000

2011 - 2,100,000

Shares: 2006 - 2011

2006 - 4600000000

2007 - 4400000000

2008 - 4400000000

2009 - 10,032,005,453

2010 - 11000000000

2011 - 107000000000

Total equity: 2006 - 2011

2006 - 135000000000

2007 - 146000000000

2008 - 164831000000

2009 - 244645000000

2010 - 280000000000

2011 - 230000000000

Book Value: 2006 - 2011

2006 - 29.4

2007 - 33.2

2008 - 37.5

2009 - 24.4

2010 - 25.5

2011 - 2.2

Book Value / Share 2007 - 2011

2007 - 33.18

2008 - 37.47

2009 - 24.38

2010 - 25.46

2011 - 2.15

Common Difference 2007 - 2011

2007 - 33.18

2008 - 37.47

2009 - 24.38

2010 - 25.46

2011 - 2.15

Common Ratio 2007 - 2011

2007 - 0.1304

2008 - 0.1292

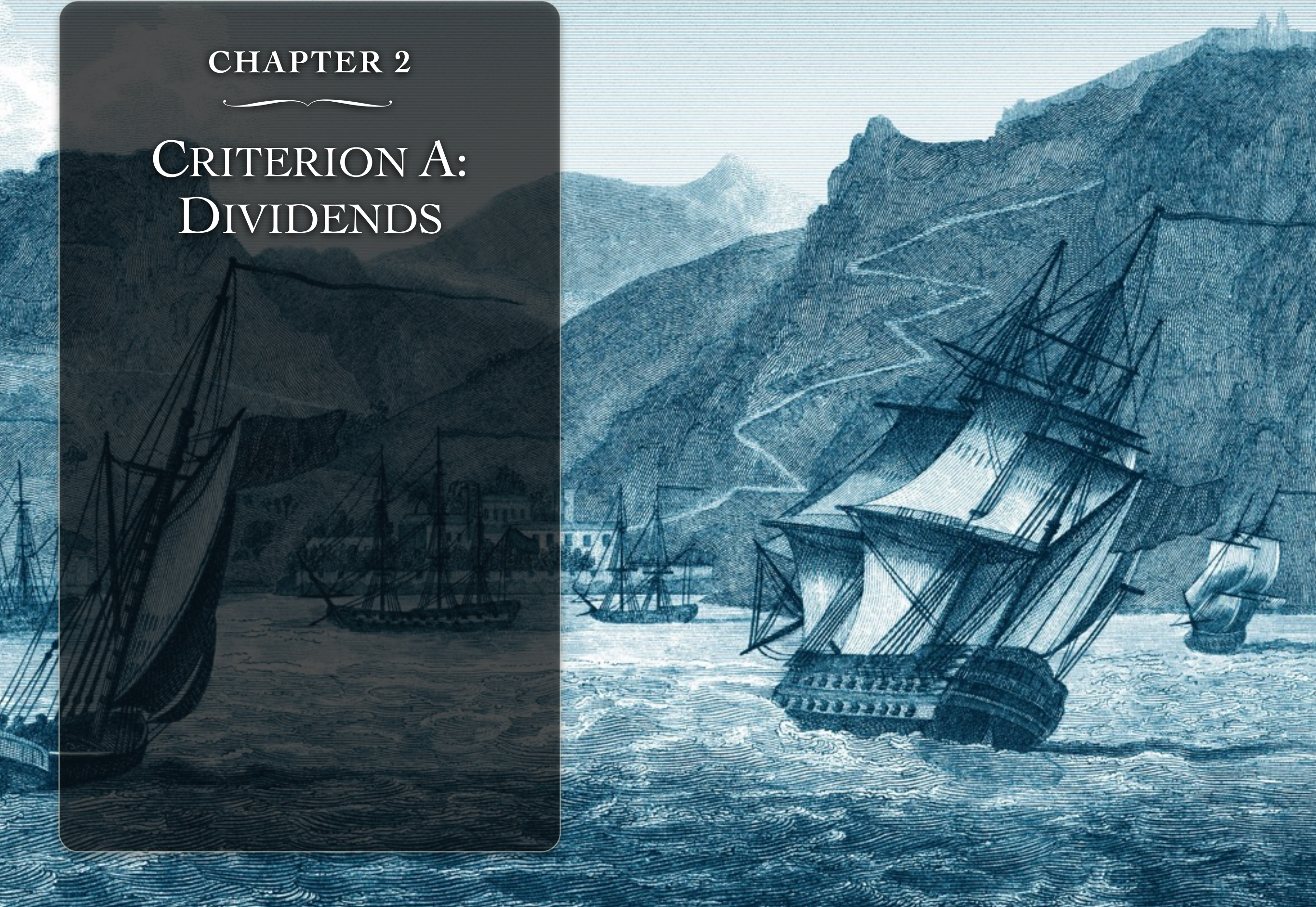
2009 - -0.3493

2010 - 0.0442

2011 - -0.915

CHAPTER 2

CRITERION A: DIVIDENDS



1-2 finding the common ratio

“ Able to find the common difference/ common ratio “

Common difference: the series {3, 5, 7, 9, 11, ...} is made by adding 2 each time, and so has a "common difference" of 2 (there is a difference of 2 between each number)

Common ratio: the common ratio is the ratio of a term to the previous term. This ratio is usually indicated by the variable r .

Common Difference 2007 - 2011

2007 - 33.18

2008 - 37.47

2009 - 24.38

2010 - 25.46

2011 - 2.15

The Average of all the ratios is 24.528. The difference between each ratio is an average of 10.4425.

Common Ratio 2007 - 2011

2007 - 0.1304

2008 - 0.1292

2009 - -0.3493

2010 - 0.0442

2011 - -0.915

3-4,5-6 total dividends

“ Able to come up with the total dividends “

A dividend is a portion of a company's earnings that is returned to shareholders.

Dividends per share 2006 - 2011:

2006: 2.12

2007: 2.40

2008: 2.24

2009: 0.04

2010: 0.04

2011: 0.04

Why did BOA drop so hard in 2009?

“ A week after JP Morgan and Goldman Sachs announced their stupendous third quarter results, Bank of America, tail between its legs, announced this morning that it lost more than a billion dollars due to lingering weaknesses in the consumer credit market.” - Derek Thompson

general: $y=mx+b$

future book value

	DIVIDE ND	DIFFER ENCE	RATIO FOR 2000-200 4 (AVERA GE)	"N"
2001	2.28	0.22	2.325	1st term
2002	2.44	0.16		2nd term
2003	2.88	0.44		3rd term
2004	1.70	-1.18		4th term

My company Bank of America started paying dividends in 1998. My company's dividends have been going up unsteadily.

I have used mean to find the ratio of the years from 2000 to 2004. I then did mean calculation for 2007-2001, which is where i took the sum of all dividends and divided it by the amount of data points i have.

	DIVIDE ND	DIFFER ENCE	RATIO FOR 2006-2011 (AVERAG E)	"N"
2006	2.12	N/A	1.1466667	1st term
2007	2.40	0.28		2nd term
2008	2.24	-0.16	Ratio for all:	3rd term
2009	0.04	-2.20	1.618	4th term
2010	0.04	0.00		5th term
2011	0.04	0.00		6th term.
		difference for all= -0.416		

General Term:

$y=mx+b$: For the general term, i will be using the total earning dividends of Bank of America. The general term i have selected is 3.102

2001, 2002:

$$2.44=m2+b$$

$$2.28=m1+b$$

$$0.16=m1+b$$

$$0.16/1=m$$

$$0.16=m$$

$$2.28=0.16x1+b$$

$$-b=0.16-2.28$$

$$-b=-2.12$$

$$b=2.12$$

2003,2004:

$$1.70=m4+b$$

$$2.88=m3+b$$

$$-1.18=m1+b$$

$$-1.18/1=m$$

$$-1.18=m$$

$$2.28=-1.18x1+b$$

$$-b=-1.18-2.28+b$$

$$-b=-3.34$$

$$b=3.34$$

2007,2010

$$2.40=m7+b$$

$$0.04=m10+b$$

$$2.36=-3+b$$

$$2.36/3=m$$

$$m=0.786$$

$$2.40=0.786x7+b$$

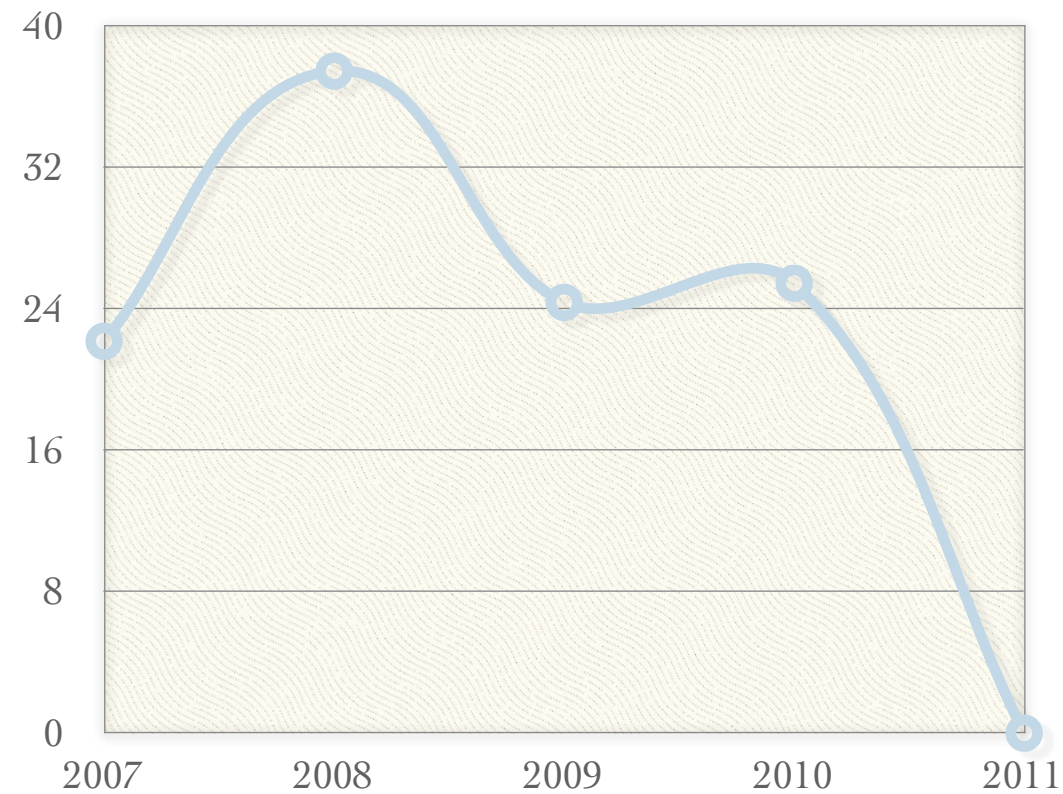
$$2.40=5.502$$

$$-b=5.502-2.40$$

$$-b=3.102$$

$$b=3.102$$

7-8 Unfamiliar



“Attempt to model the book values, no. of shares, profit or dividends with unfamiliar equations “

for my unfamiliar, i have plotted a graph using the function “PowerReg”

I have chosen to use my book values from 2007-2011 and plotted a graph.

The equation i used was $y = A \times X^b$

data inputed:

1-(2007) - 33.18

2-(2008) - 37.47

3-(2009) - 24.38

4-(2010) - 25.46

5-(2011) - 2.15

a=56.48

b=-1.22

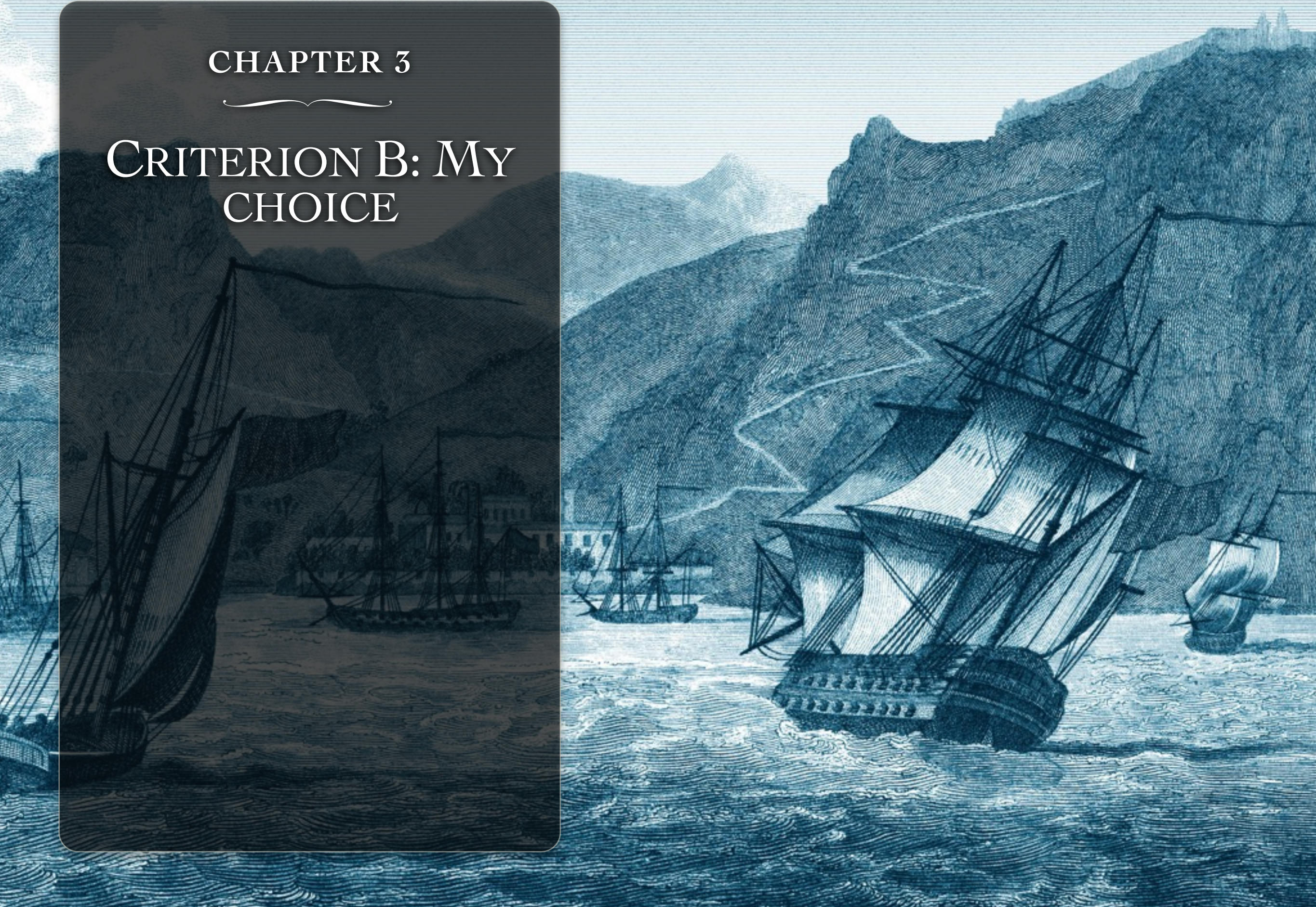
r=-0.653

r^2=-.427

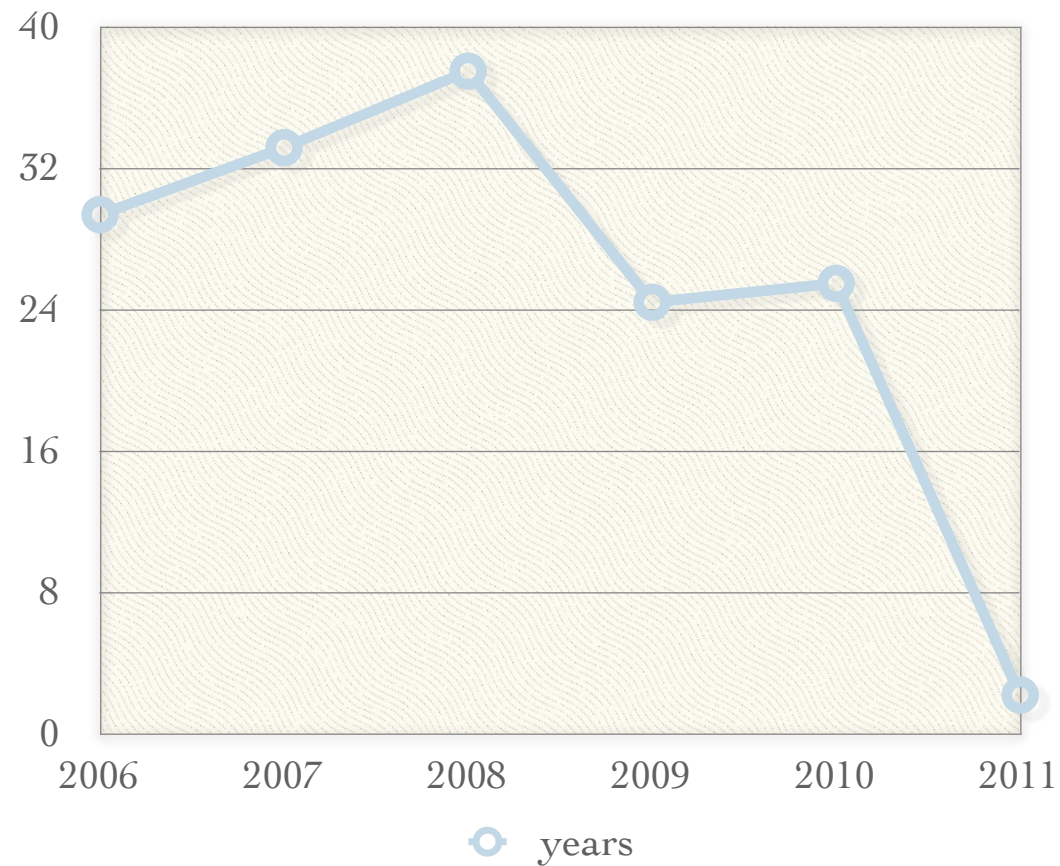
MSe= 1.0751

CHAPTER 3

CRITERION B: MY CHOICE



1-2

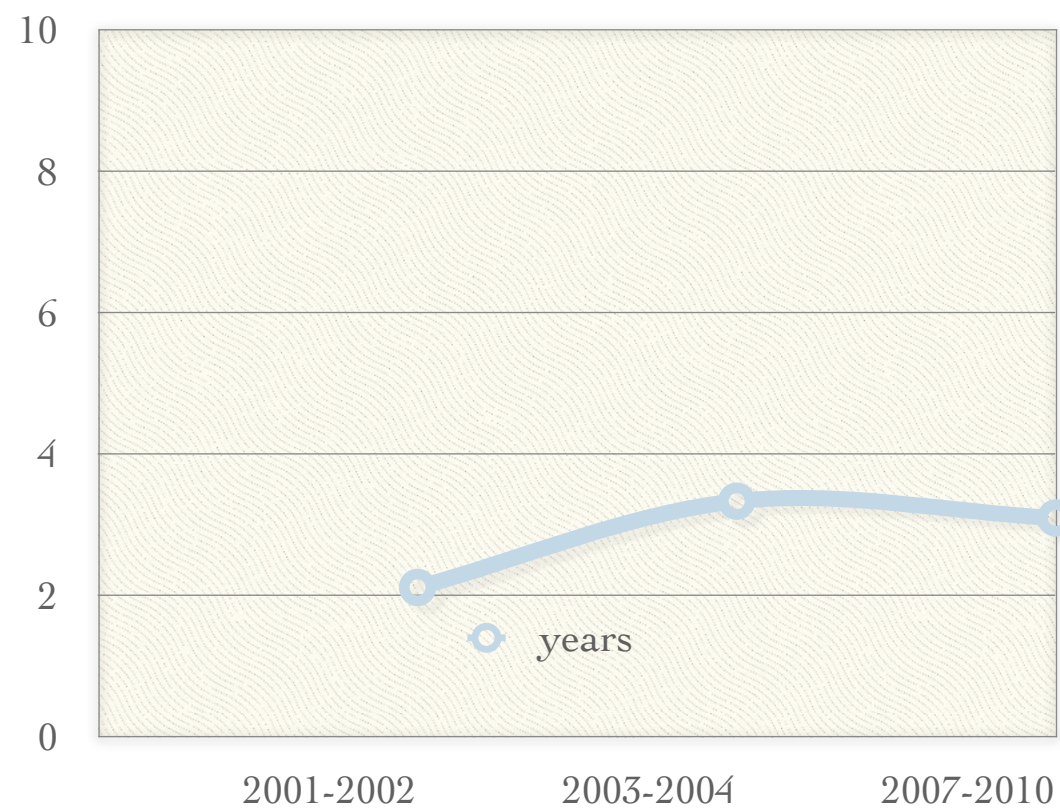


This is a line graph showing the book values of the years from 2006-2011.

The pattern shows an increase from 2006-2008. in 2009 the time of the financial tsunami, the book value greatly dropped over a 3 year margin.

3-4

I have chosen the data that i have calculated of the general terms and drawn a best fit line in between the calculations. the calculations can be found in criterion A level 5-6 general term calculations.(I could not space this out because the Ibook portfolio needs a minimum of 4 pieces of data to fill the full chart so it is not evenly spread.)



5-6

“predict the values for 2007-2012. Give clear reasons for why you are predicting these values.” (i will no be predicting over as i will not be able to calculate my percentage error from my calculations. I did not look at the annual reports)

THE first column of numbers (2.1, 3.0 billion) are my instinct predictions. no calculations, the calculations are followed up in the same line.

Prediction Values of Bank of America 2007-2012

Sense prediction: $T_n = ar^{(n-1)}$ formula:

2007: 2.1 billion = first term: $T_1 = 2.1 \times 1.618(1-1) = 3.397 \times 0 = 0$

2008: 3.0 billion = second term $T_2 = 2.1 \times 1.618(2-1) = 3.3978$

2009: 3.5 billion. = third term: $T_3 = 2.1 \times 1.618(3-1) = 6.795$

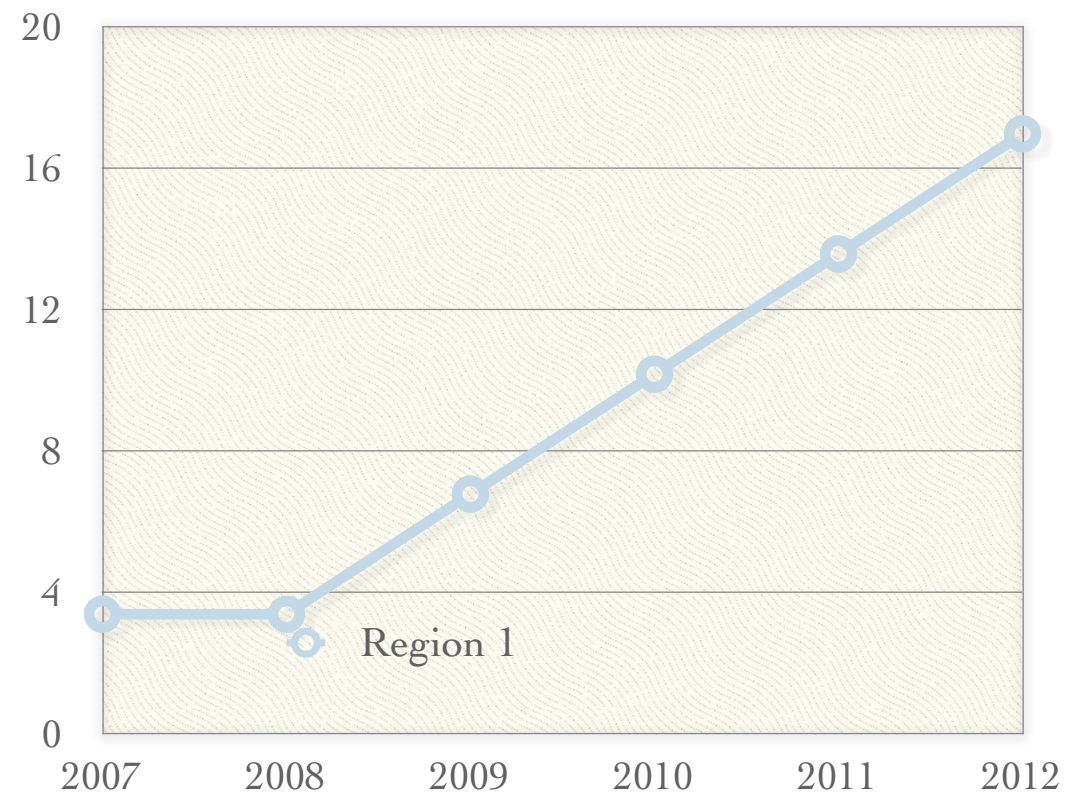
2010: 2.5 billion = fourth term: $T_4 = 2.1 \times 1.618(4-1) = 10.19$

2011: 1.5 billion = fifth term: $T_5 = 2.1 \times 1.618(5-1) = 13.5912$

2012: 2.5 billion = sixth term $T_6 = 2.1 \times 1.618(6-1) = 16.989$

7-8

My predictions:



$$t_n = ar^{(n-1)}$$

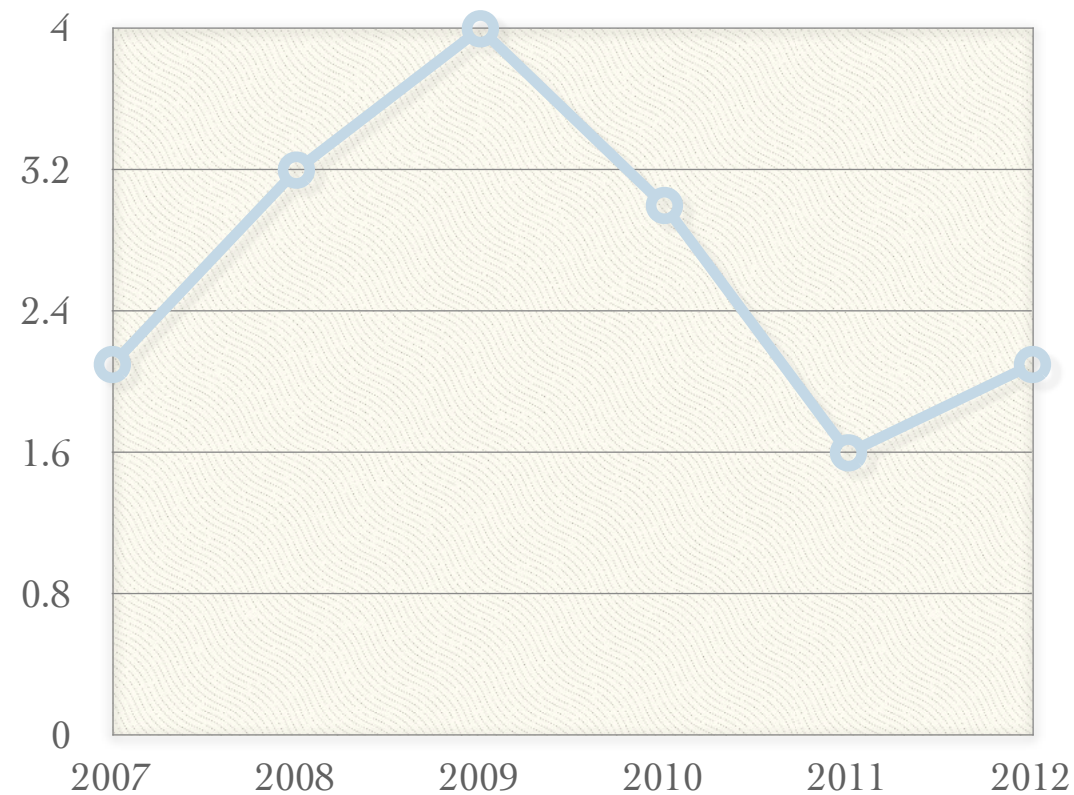
a=value

r common ratio

year

The raise in the vector is positive going from the bottom left to the top right. but it is unrealistic as there are market inflations which will effect my predictions.

Actual Data:



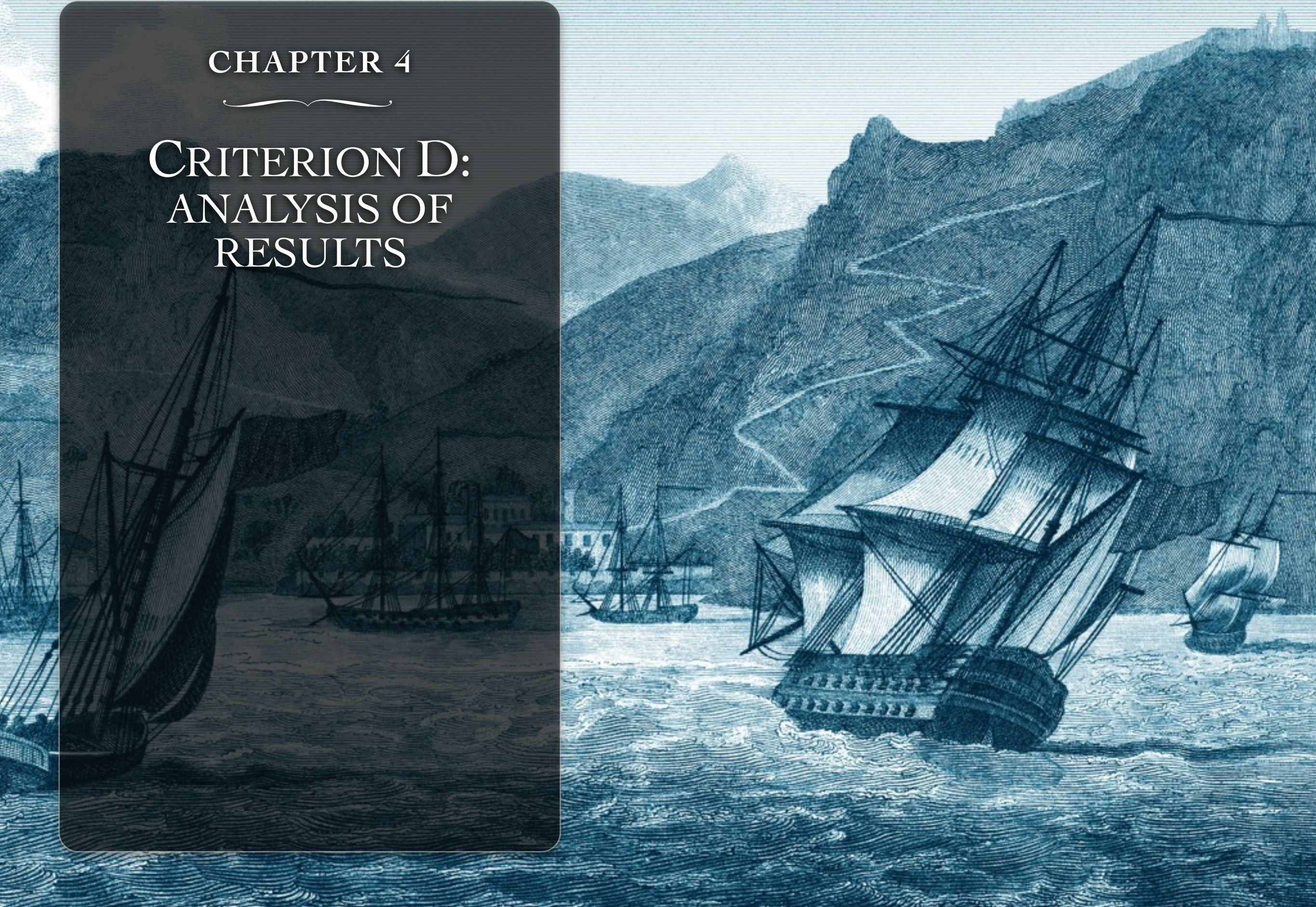
Why I think my data is accurate:

I think my data is reasonably accurate because from observing, no calculation was off more by 0.5 billion. I started by looking at the very first year which was the only

year that i peeked into to start it off. I then used the equation $y = AxX^b$ to continue and then i considered the financial tsunami in 2009 so i knew it wouldn't impact that exact year but the years following it. I then predicted that the value of Bank of AMerica would heal over a two year period, 2011-2012. I think that no prediction would be accurate to that maths could solve as there are little factors to consider like if a large shareholder buys out at a random time, it would effect the dividends and the total profits that Bank of America would get in the long run.

CHAPTER 4

CRITERION D: ANALYSIS OF RESULTS



level 1-2: real world connections

“ Attempts to describe the findings related to the real life situations of the company.”

The analysis i have chosen is the values i have predicted for 2009-2015. The predictions. The purpose of predicting the future is a companies value is to see the future forecast of the companies profits. If the company has an unsteady outcome of profits over the years, i would not recommend investing in the company. From my data of predictions, it jumps an average of 3 billion every year. It is connected to real life my helping ordinary people determine what company they want to invest into make money. They look at the overall forecast of the company, determine if they have a steady value over the years. If i were to give advice on investing in this company, i would recommend not to because there is either an unsteady average of 3 billion drop, then later 1 billion drop. and investor would loose a lot of money.

Level 3-4: degree of Accuracy (percentage error)

“ Attempted to generate data for the previous data, as to generate to the percentage error. “

Percentage error: I will be taking my predicted value and cross referencing them with the actual values. Using the equation of given amount/total amount x100. that would give me the percentage of how much i was off by in my predictions.

2008: $3.0/3.2 \times 100 = 93.75\%$

2009: $3.5/4.0 \times 100 = 87.5\%$

2010: $2.5/3 \times 100 = 83.3\%$

2011: $1.5/1.6 \times 100 = 93.75\%$

2012: $2.5/2.1 \times 100 = -19.04\%$

level 5-6: Improvements

“ Suggests improvement towards the existing method “

“ Provide detailed explanations to whether it makes sense in real life. “

In my opinion, an improvement towards my existing method is the inflation price each year on the market. The next time I predict the price of my company. i will incorporate the inflation price of the regular market and subtract that amount from my value at the end of the year. Considering small things like that could score me extra points.

Another factor that i should consider that i could relate my company to similar ones. For example i could trend Bank of America with other banking companies who have the same kind of system. Then if i were to make an estimation or calculation of my prediction, i could cross reference it to that company to even see if the values are even similar to get me started off.